Technical Bulletin #80:

Integrated Pest Management – Live Barriers

What are live barriers?

Live barriers are grass barriers planted on the borders of a crop in order to protect it or isolate it from nearby plants or crops that may share viruses and other pests and diseases.

The main purpose of a live barrier is to prevent infection of a crop from insect transmitted viruses that are carried by certain species of aphids and in some cases leaf-hoppers. Since these insects feed by sucking plant juices, they carry viruses externally on their mouth parts (stylet) and when feeding will infect healthy broad leaved plants or crops. The live barriers act as the first line of defense where insects will land and feed on the live barrier "cleaning" their mouth parts before entering the main crop. Grass crops such as sugar cane, king grass, millet, sorghum and corn are preferred plant barriers because of their height.

In addition, live barriers can also help protect crops from strong winds and dust, and may help maintain natural enemies, like ladybug beetles and praying mantis insects.

What characteristics should a live barrier have in order to help us prevent viruses?

1. It has to be taller than the crop we are trying to protect, thus, has to be planted before the crop. Normally live barriers are transplanted 3 or 4 weeks before the protected crop.

2. It has to be planted with corn, sorghum, sugar cane, a tall grass or even a short bamboo species in order to protect cucurbit or solanaceous crops from viruses.

3. It has to be planted all around the plot to protect 100% of the possible access to the plot by pests.

4. It has to be thick enough (at least three rows of plants in the case of corn) to prevent vectors from passing directly to the crop.

5. It has to be free of broad leaf weeds to avoid infection of these plants within the same barrier, thus helping to disseminate viruses.

6. It has to be green, well fertilized, irrigated and well-kept to be attractive for incoming aphids.

7. It has to be kept free of pests and diseases like fungus, corn aphids, beetles and worms to prevent pest reproduction within cropping grounds.

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